

# Work Order ID 66004

Tuesday, February 01, 2011 12:58:04 PM



Page 1

Item ID: D3391-021

Accept



Setup Start



Revision ID:

Item Name: Fwd Tube Assembly

Stop



Start Date: 2/2/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 2/7/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D3391	Rev H

100 0.00



Skidtubes

Skidtubes

Memo

Skidtubes

Cut extrusion to 46.52 +0.010 -0.020

110



BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

CNC Delta 100 Bender

Bend as per Dwg D3391 Using Bend Prog 3391021

120



QC5- Inspect part completeness to step on W/O

QC

Memo

Quality Control

0.00

$h = 6.75''$

$\angle = 12.8^\circ$

Signature @

11-2-2

11-2-2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 66004**

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Item ID: D3391-021

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Revision ID:

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Item Name: Fwd Tube Assembly

Start Date: 2/2/2011 Start Qty: 1.00

Cust Item ID:

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Customer:




Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00							
	HAAS CNC VERTICAL MACHINING #1								
HAAS 1	Memo	0.00							
HAAS CNC vertical machine #1	1-Machine as per Folio FA590 Rev. AA & Dwg D3391 Rev. H Identify as D3391-1 2-Deburr		JL	11/02/15	⊙				
140		0.00							
	QC2- Inspect parts off machine FA1/FA1B		JL	11/02/15					
QC	Memo	0.00				1	0		
Quality Control									
150		0.00							
	CONVENTIONAL MILLING MACHINE								
Mill Conv	Memo	0.00							
Conventional Milling Machine	Drill X1 Aft cap as per Dwg D3391 .1875" dia		JL	11/02/16		1	0		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Item Name: Fwd Tube Assembly

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Required Date: 2/7/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

160

QC2- Inspect parts off machine FAI/FAIB

0.00

SL 11/02/16



QC

Memo

0.00

Quality Control

170

QC8- Inspect parts - second check

0.00

on 11/02/16



QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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180

0.00



Skid tubes

Skid tubes

Memo

0.00

Skid tubes

1-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size)  
(ONLY DRILL HOLES MARKED "A")

2-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

5- open float bag holes 0.328" and counter sink as per dwg D3391

6-Deburr & Scribe Batch number Inside aft end.

7-Transfer drill D3391-021 with D3391-023

190

0.00



QC

Quality Control

Memo

0.00

QC5- Inspect part completeness to step on W/O

*Drill Fixed Saddle holes + weight holes as per dwg. 3391*

*BE 11/02/23*

*DP 11-2-23*

*W 11/02/23*

*15 11/02/23*

*70*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

200

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

1 ~~0~~ BE 11/02/23

210

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

11-2-23

220

Skidtubes

0.00



Skidtubes

Memo

0.00

Skidtubes

1-instal spacers as per dwg D3391

A/R Magnabond 6398 batch: m16227

exp. date: 06/2011

cure time 12hrs. as per QSI015

2- grind crossbolt flush

3-back drill crossbolt if necessary

BE 11-02-23  
7 BE 11/02/24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

230



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

ml 11 02 24 ①

235



HandFinish

Hand Finishing

Pressure Wash per QSI005 4.3

0.00

Memo

AND REALODINE AS PER PAR09-043

0.00

1 0 90 11/02/24

240



Powdercoat

Powder Coating

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

Memo

START TIME: 8:00  
OVEN TEMPERATURE: 320°  
FINISH TIME: 9:00

0.00

1 BL 11-2-25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Start Date: 2/2/2011 Start Qty: 1.00

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Required Date: 2/7/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

250

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

1 0 11/02/28 M

255

Skidtubes

0.00



Skidtubes

Memo

0.00

Skidtubes

\*\*\*\* install D3591-1 spacer as per DSI9364 and wearplate and gasket as per  
DWG \*\*\*\*

1 0 M 11/02/28

257

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

5/10/28

(10)

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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**Work Order ID 66004**

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Item ID: D3391-021

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Item Name: Fwd Tube Assembly

Start Date: 2/2/2011 Start Qty: 1.00

Cust Item ID:

Required Date: 2/7/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

260

Identify as per dwg &amp; Stock Location: \_\_\_\_\_

0.00



Packaging

Memo

0.00

Packaging

*11/02/28* (1)

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

*11/02/28* (2)*MF*  
*11-02-28*

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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# Picklist Print

Tuesday, February 01, 2011 12:58:01 PM

Page 1

Work Order ID: 66004

Parent Item: D3391-021

Parent Item Name: Fwd Tube Assembly



Start Date: 2/2/2011

Required Date: 2/7/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP A 05.09.13 New issue KJ/JLM  
 IPP B 06.02.10 Dwg rev.D ecn 773 EC  
 IPP C 06.05.02 Added inspections EC  
 IPP D 07.03.13 rev F dwg EC  
 IPP E 07.11.07 revG dwg ecn1053P EC verified by: DD  
 IPP Rev:f ECN 1056 07-11-12 DD verified by: EC  
 IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC  
 IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC  
 IPP Rev J 09.02.02 added hardware EC verified by: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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D6013-047		Manufactured	No			100	Each	34.0000	1	1			
Skidtube Material													

Location Loc Qty Loc Code

LG 34  
 23935 3  
 26547 31

D3670-4-200		Manufactured	No			220	Each	56.0000	4	4			
SPACER													

Location Loc Qty Loc Code

LG 56  
 57349 34  
 63317 22

D3401-041		Manufactured	No			255	Each	11.0000	1	1			
Tow Cap Assembly													

Location Loc Qty Loc Code

FP 11  
 46029 10  
 50316 1

① DP 11-2-2  
 BE 11/02/23  
 B 66041 (X4)  
 M 11/02/23  
 V

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Parent Item: D3391-021



Parent Item Name: Fwd Tube Assembly

Start Date: 2/2/2011

Required Date: 2/7/2011



Start Qty: 1.00

Required Qty: 1.00

D3564-13	Manufactured	No	255	Each	13.0000	1	1
							<u>XL 11/02/10</u>
Wearshoe							



<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP17	13	
59660	1	
62229	12	

D3566-13	Manufactured	No	255	Each	23.0000	1	1
							<u>XL 11/02/10</u>
Gasket							



<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

FP012	3	
61996	3	
FP014	20	
64070	20	

AN960C10L	<u>NAS1149C0332</u> R	Purchased	No	255	Each	25.0000	10	10
							<u>XL 11/02/10</u>	
washer								

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
-----------------	----------------	-----------------

ST245	25	
107534	25	11116304

AN3C4A	Purchased	No	255	Each	2,072.000	10	10
							<u>XL 11/02/10</u>
BOLT							

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
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ST350	2072	
115300	25	
116075	947	
116590	100	
116704	1000	

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Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Parent Item: D3391-021



Parent Item Name: Fwd Tube Assembly

Start Date: 2/2/2011

Required Date: 2/7/2011

Start Qty: 1.00

Required Qty: 1.00

D3672-1 Manufactured No

255

Each

1,307.000

4

4



Phenolic Washer



XL 1102/28

Location

Loc Qty

Loc Code

ST077

1307

42329

10

52505

297

64177

1000

XL

AELS-1032-130 Purchased No

255

Each

0.0000

2

2



INSERT

M115581



X2 XL 1102/28

AELS-1032-225 Purchased No

255

Each

0.0000

10

10



INSERT

M110768



X10 XL 1102/28

W/O:		WORK ORDER CHANGES					
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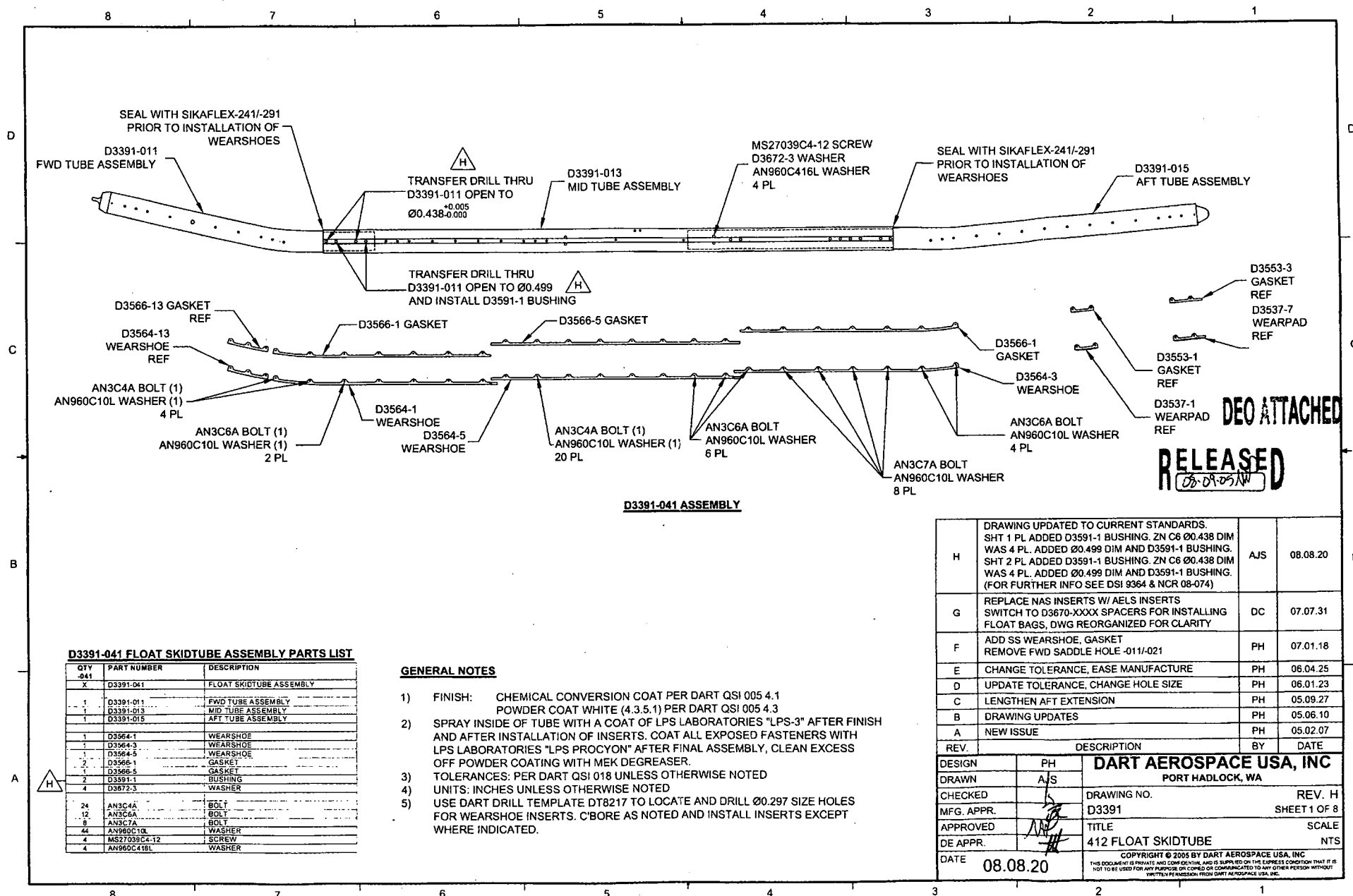
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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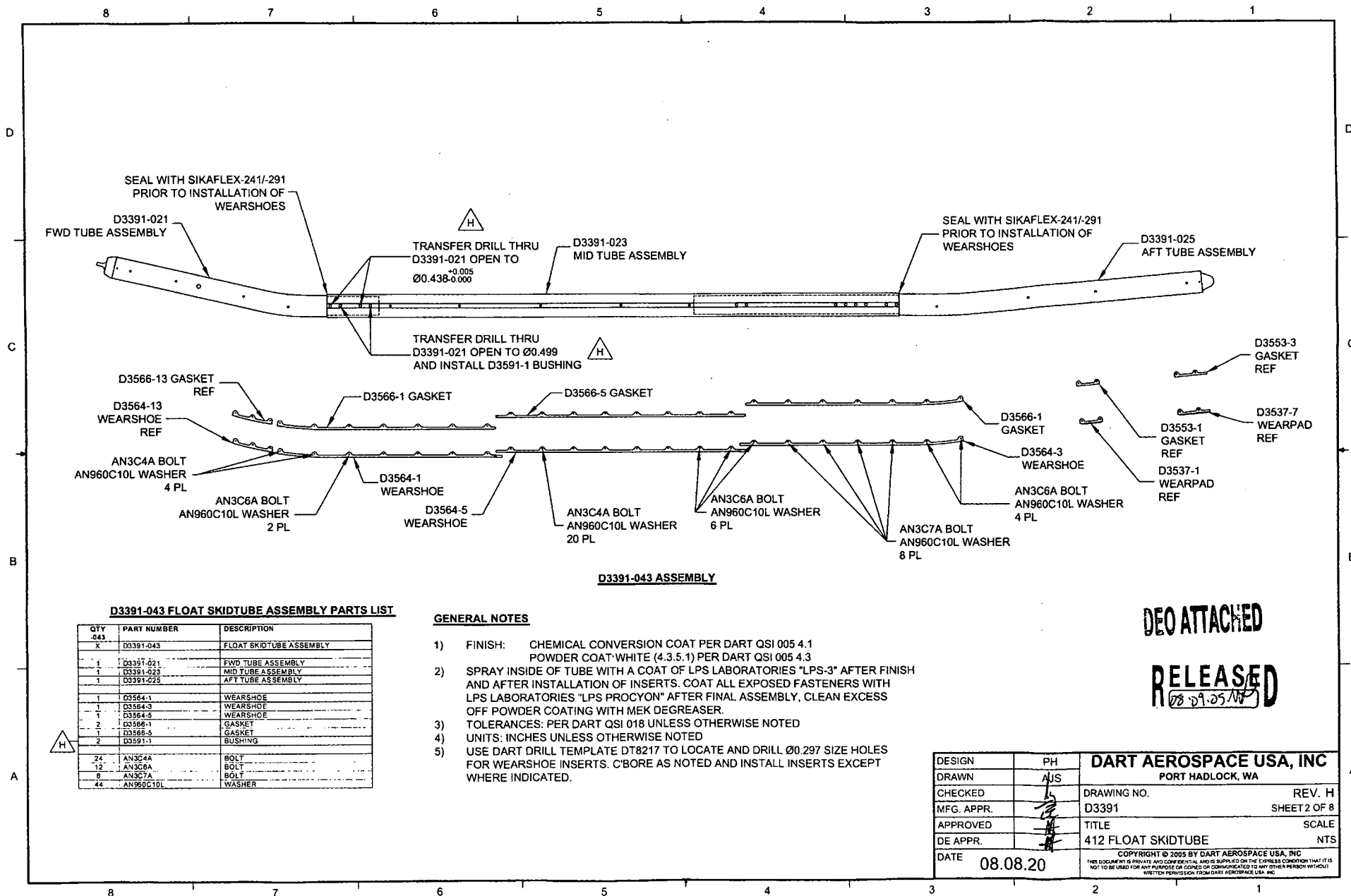
**NOTE:** Date & initial all entries





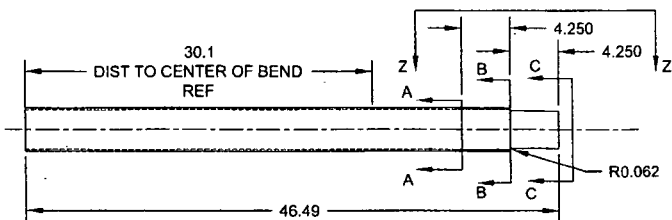




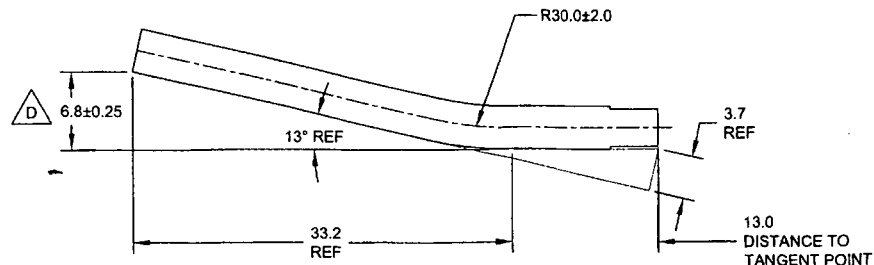


DEO ATTACHED

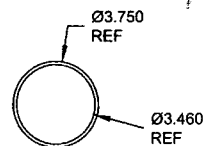
RELEASED  
08 09 25 10



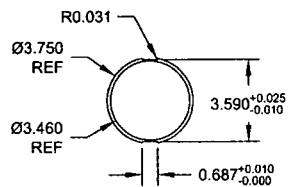
**D3391-1 CUTTING DETAIL**  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



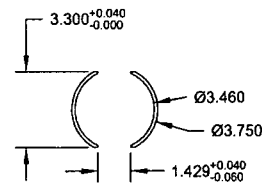
**D3391-011/-021 BENDING DETAIL**  
(MAKE FROM D3391-1)



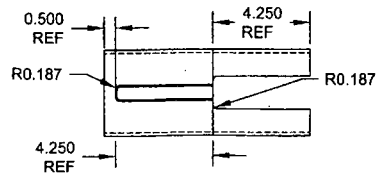
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SCALE 2X



**SECTION B-B**  
SCALE 2X



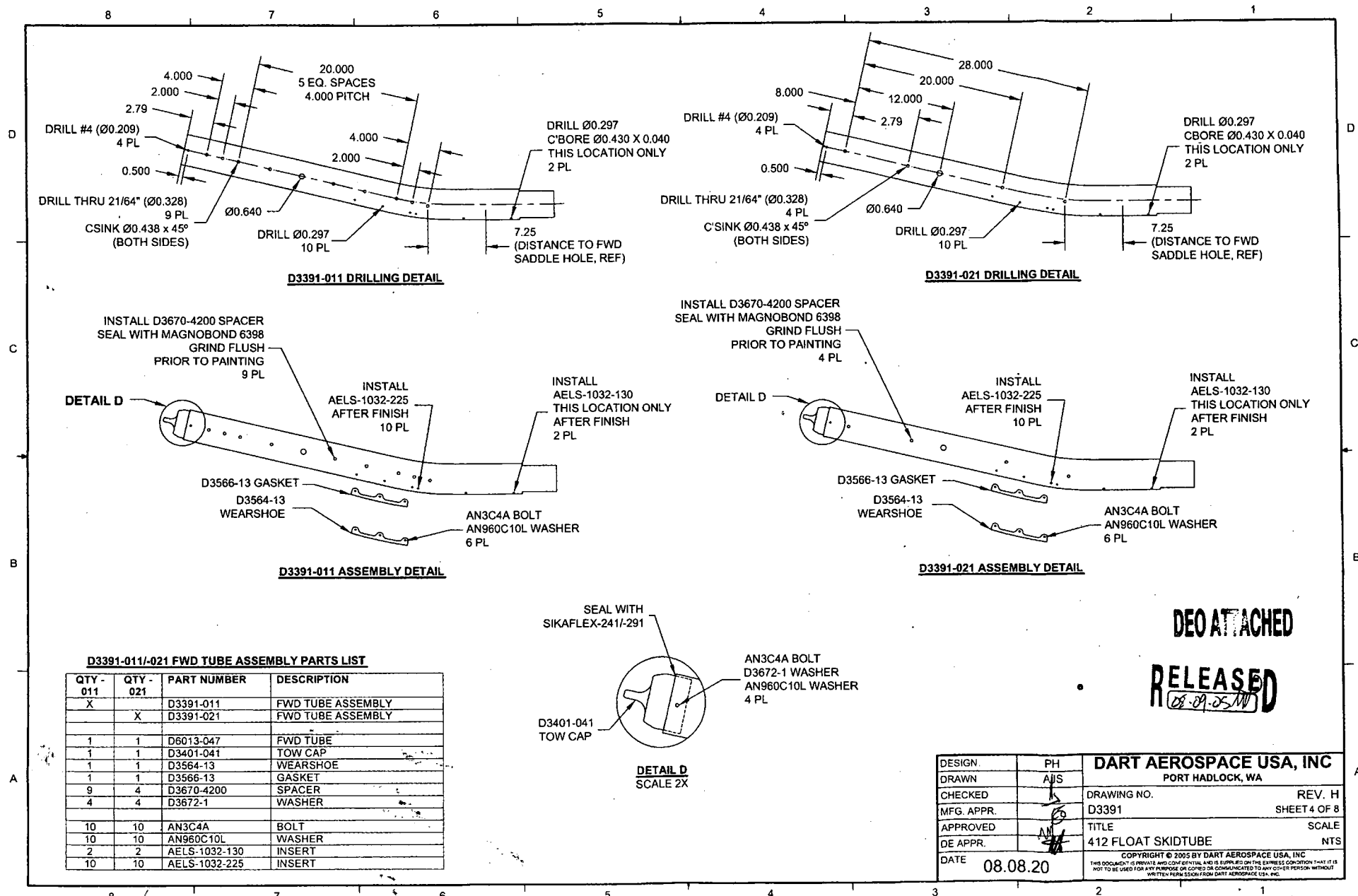
**SECTION C-C**  
SCALE 2X



**VIEW Z-Z**  
SCALE 2X

DEO ATTACHED  
RELEASED  
2005/05/11

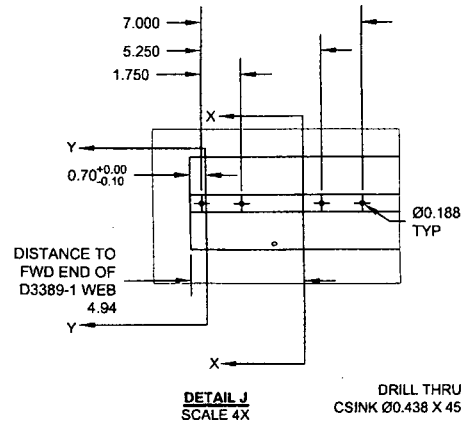
DESIGN	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG APPR.		D3391	SHEET 3 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC	
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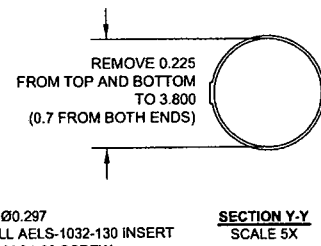
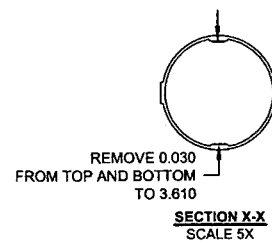
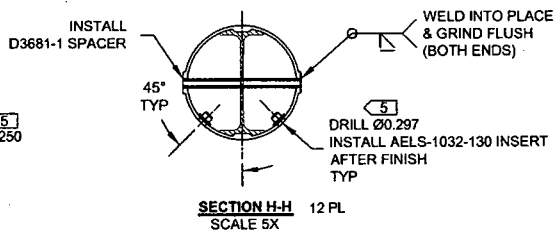
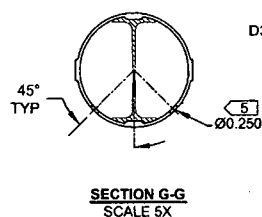
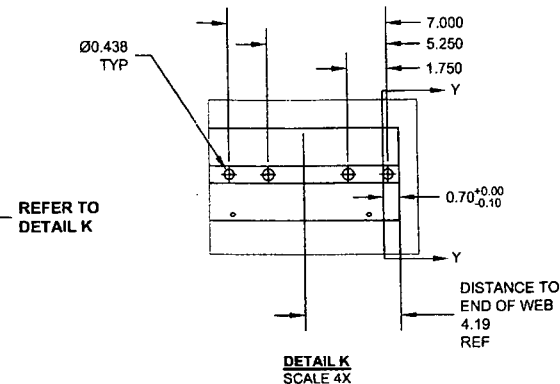
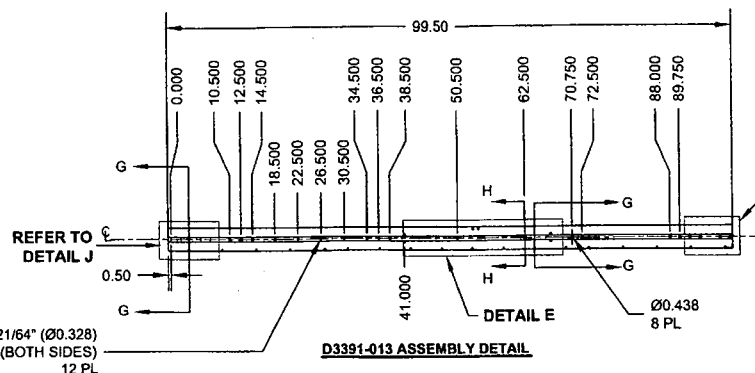
DEO ATTACHED

RELEASED  
 08-09-25 M

DESIGN.	PH	<b>DART AEROSPACE USA, INC</b>	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 4 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
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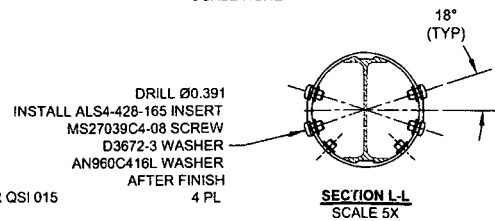
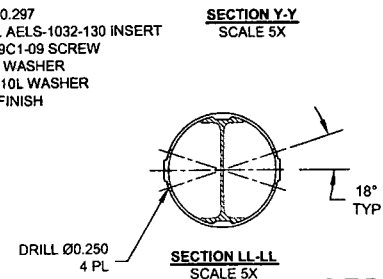
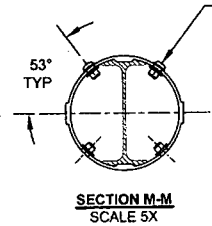
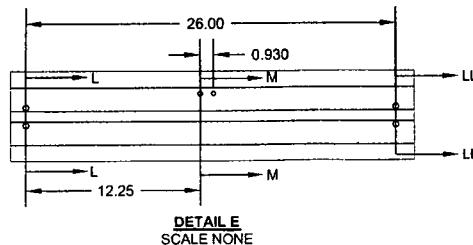


DRILL THRU 21/64" (Ø0.328)  
CSINK Ø0.438 X 45° (BOTH SIDES)  
12 PL



**D3391-013 MID TUBE ASSEMBLY PARTS LIST**

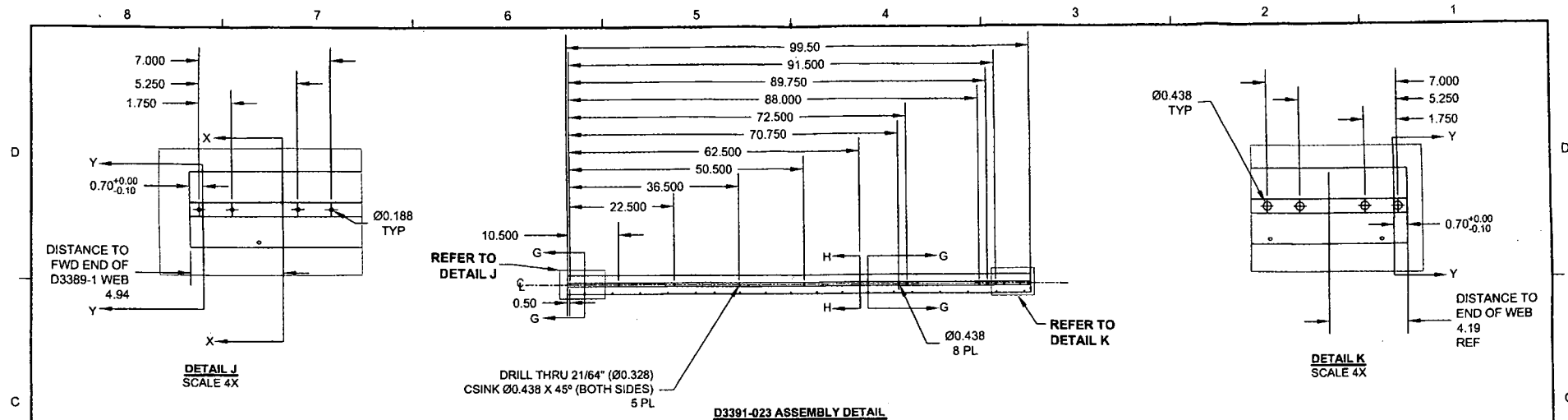
QTY -013	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW



**DEO ATTACHED** **RELEASED**

- D3391-013 MID TUBE ASSEMBLY**
- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
  - 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
  - 3) WELDING: PER DART QSI 004

DESIGN	PH	<b>DART AEROSPACE USA, INC</b>
DRAWN	AUS	PORT HADLOCK, WA
CHECKED		DRAWING NO. D3391
MFG. APPR.		REV. H SHEET 5 OF 8
APPROVED		TITLE 412 FLOAT SKIDTUBE
DE APPR.		SCALE NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC



#### D3391-023 MID TUBE ASSEMBLY PARTS LIST

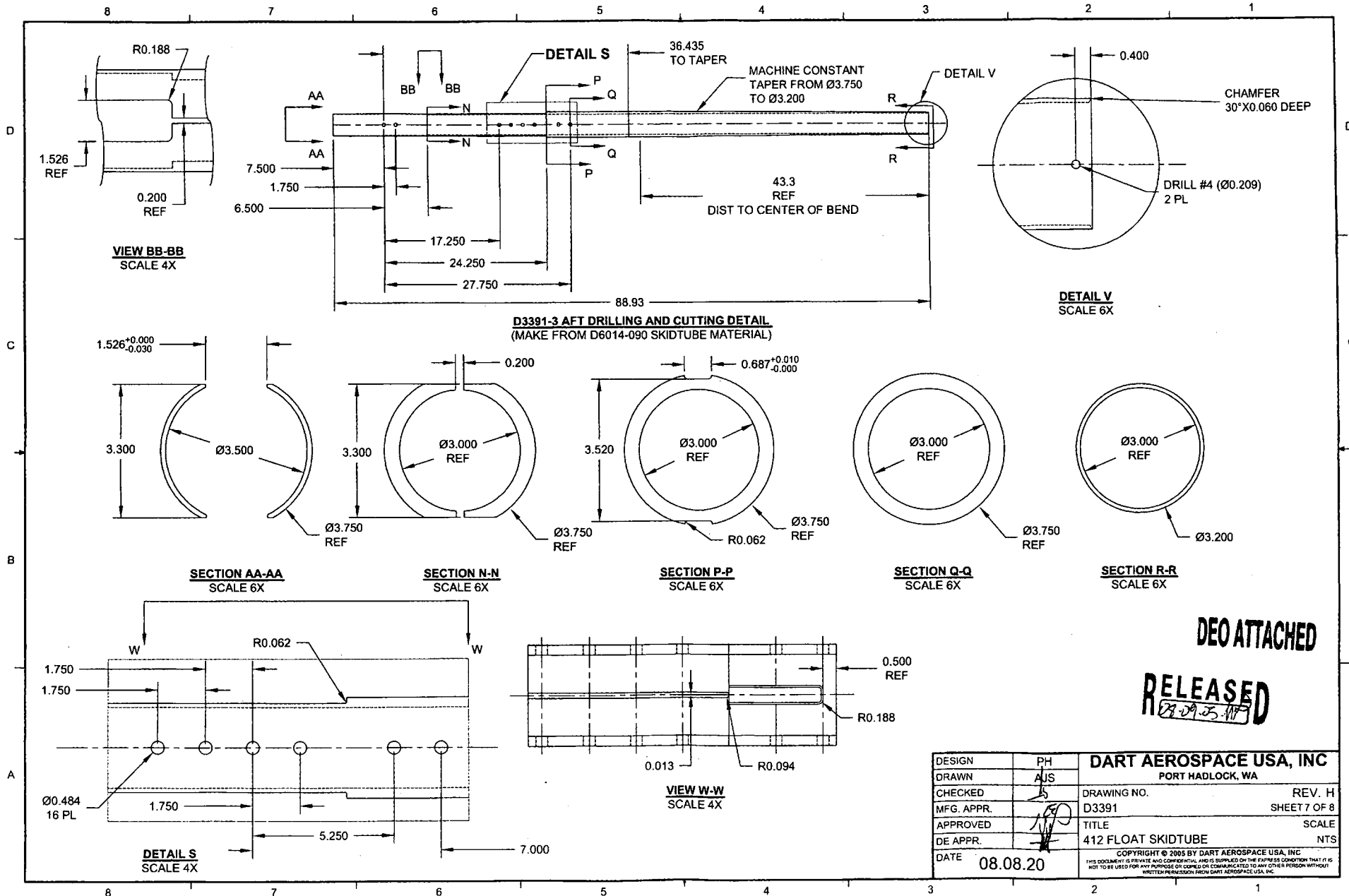
QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

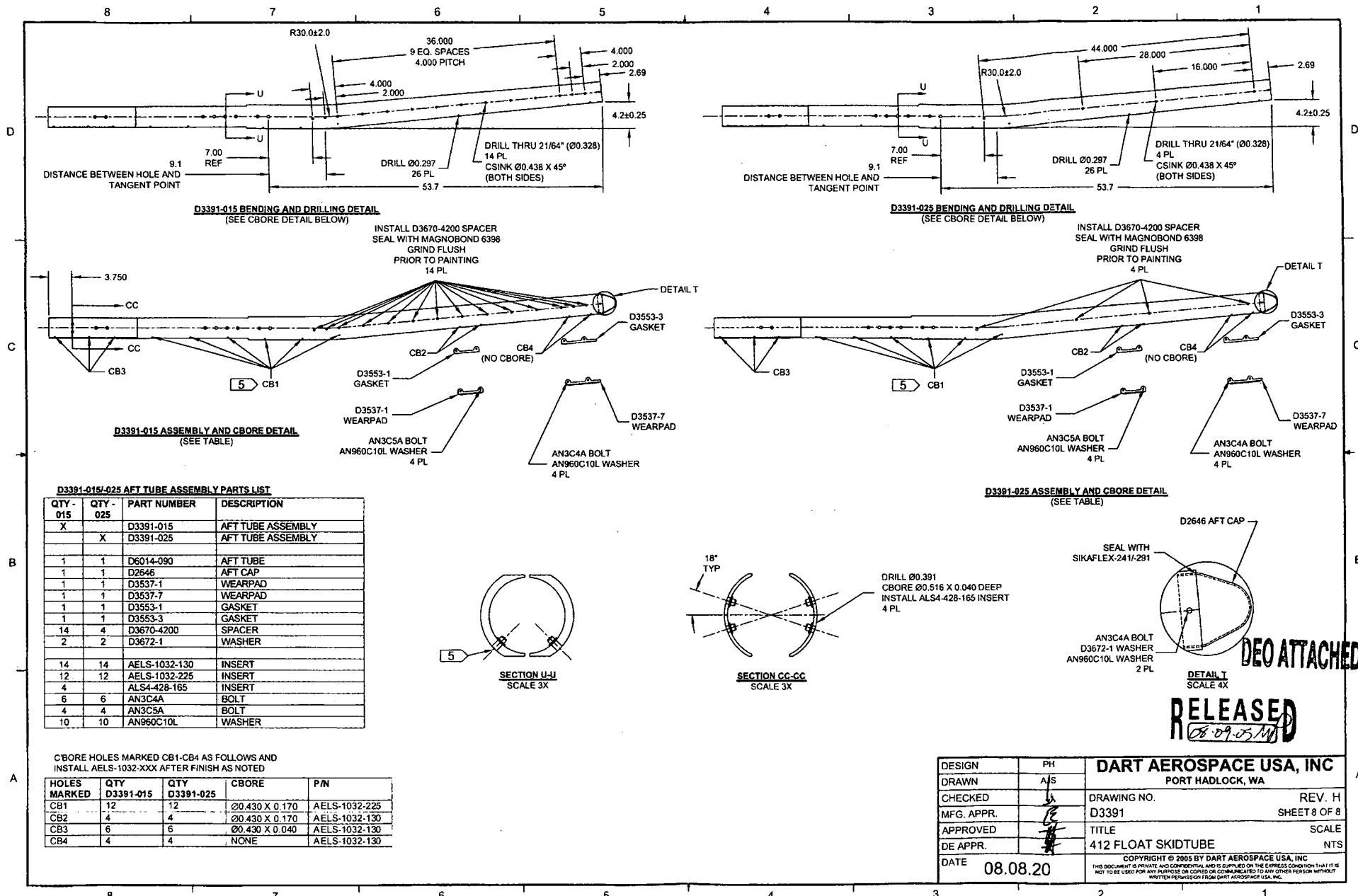
#### D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
- 3) WELDING: PER DART QSI 004

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 6 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
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DEO ATTACHED  
RELEASED  
08-09-05-14







DRAWING NO. D3391	TITLE 412 FLOAT SKIDTUBE	REV. H	DART AEROSPACE USA, INC ENGINEERING ORDER		D.E.O. NO. D3391-H-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>h</i>	MFG. APPR. <i>h</i>	APPROVED <i>MP</i>		DE APPR. <i>h</i>		
DATE 09.09.23	DATE <i>09.09.24</i>	DATE <i>09/09/25</i>	DATE <i>09/09/30</i>		DATE <i>09/09/30</i>		

**PURPOSE:**

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

**CHANGE:**

AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

- 2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH~~  
~~AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH~~  
 LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS  
 OFF POWDER COATING WITH MEK DEGREASER.

**RELEASED**  
 2010-02-02

*MP*

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